Vol. 5. No. VII. June, 1899.

Journal of the Amateur Photographic Society of Madras.

Patron.
H. E. Sir ARTHUR ELIBANK HAVELOCK, G.C.M.G., G.C.I.E.

President.
E. W. STONEY, Esq.

Vice-Presidents.
F. DUNSTERVILLE, Esq.
Surg.-Genl. C. SIBTHORPE, C.B.

Committee.
A. CHATTERTON, Esq.
A. E. LAWSON, Esq.
Col. J. MAITLAND, I.M.S.
C. E. PHIPPS, Esq.
A. PILKINGTON, Esq.
F. J. WILSON, Esq.

Honorary Secretary.
S. JACKSON, Esq.

Honorary Treasurer.
V. G. LYNN, Esq.

CONTENTS.

	Page.
EDITORIAL NOTES	73
ROYAL PHOTOGRAPHIC SOCIETY EXHIBITION	75
OUR HOME LETTER	78
CORRESPONDENCE	79
EXTRACTS:—Directions for Taking Photographs in Natural Colours; Advice in Plain Words on Starting Photography; Copying	79
COMPETITIONS, &c.	84

EDITORIAL NOTES.

THE Kumar Rajah of Bobbili asks us to publish the following notice, which we gladly do:—

"The Kumar Rajah of Bobbili will be glad to receive photos of the natives of Western India in exchange for some of his of the 'Gadabas', a curious Indian tribe living in a very few parts of the Vizagapatam District."

WE have received an artistic little booklet entitled *The 'N. & G.' Camera in New Zealand.* It contains thirteen excellent illustrations of very varied subjects reproduced in Swantype. The excellence of the photographs is, of course, largely due to the Zeiss lens with which it was fitted, for, after all, the camera itself is quite a secondary consideration except for convenience. The "N. & G." camera is undoubtedly a well made and well designed instrument, but a good many people think that it is rather too complicated for ordinary work. We can quite believe, however, that any one who has thoroughly mastered all its possibilities will swear by it as the best of hand cameras.

THE rapidity with which photography is replacing eye observations in astronomy is shown very clearly by some of the papers received by last Mail. Thus at the meeting of the Royal Astronomical Society held on May 12th, the question of longitude determination came up in a paper by Prof. Pio, a Greek Astronomer. During the discussion:—Prof. H. H. Turner said. "I should like to express a personal opinion that the time for studying any eye method of determining longitude has gone by. Photography is now, and always will be, very much better.... I have no hesitation in saying that when the telegraph is not available for signals, and observations of the moon must be substituted, a photographic method is the proper one.... We measure in a photograph the distance of the

moon not from one star only but from a number of stars surrounding it, and so obtain much more accurate results than from a single instance."

AT the same meeting the Astronomer Royal read a paper on observations of the satellite of Neptune from photographs taken with the 26 inch refractor and the Thompson equatorial. By the use of an occulting shutter short exposures were made of the planet while long ones were made of the satellite. By this means sharp images which could be measured with accuray were obtained of both.

AGAIN when we turn to the Annual Report to the Board of Visitors of the Greenwich Observatory we see what a large portion of the work is photographic. In addition to the work with the astrographic equatorial, which is used for charting the heavens, and systematic work done in photographing the sun, many valuable series of photographs have been taken with the large telescopes. Perhaps the most interesting of these are photographs of double stars which are now taken very successfully and yield results of great accuracy.

THE importance of ammonium persulphate to the photographer was quickly recognised after Lumière's original paper appeared showing that as a reducer it was of great value since it first attacked the denser part of the negative. An important paper by Prof. Namias has recently appeared on the uses of this salt, which shows that its value is even greater than was at first supposed. As regards the use for reducing negatives, Namias holds that the method originally proposed by Lumière is the best, *viz.* to immerse the negative in a 5 per cent. solution. To prevent after-reduction during washing the negative should be dipped in a 10 per cent. solution of sodium sulphite. For old negatives this 5 per cent. solution does not seem too strong, but, so far as our own experience goes, a 2 or 3 per cent. solution is quite enough for freshly developed negatives.

IN addition to its use as a reducer the persulphate has, according to Namias, other valuable properties. For removing the yellow stain on negatives it is more effective than any substance previously tried. For this purpose the negative should be soaked in a one or at most 2 per cent. solution for from five to fifteen minutes, then placed in a 5 per cent. solution of sodium sulphite and finally washed. If the stain is very persistent, there is a risk of reducing the negative; in that case, the solution should be made slightly alkaline with ammonia, when the reducing power is destroyed.

FOR positive work on printing-out papers the persulphate is very useful as a reducer. A neutral solution acts too energetically but a one per cent. solution of persulphate to which one per cent. of ammonia is added works well. The prints may be reduced before or after toning or after fixing. The prints should be well washed and if treated after fixing should be subsequently immersed in a bath of sodium sulphite of a strength of from one or two per cent.

IF a bromide print is wanted in a hurry it should be superficially washed and then bathed for about five minutes in a one or two per cent. ammoniacal persulphate solution which oxidises the hypo. Yellow stains on bromide prints may be removed in the same way. If the print is also to be reduced omit the ammonia.

ANOTHER useful application of the persulphate is the restoration of old silver paper that has turned yellow. Namias found that gelatino-chloride paper which, after four months keeping, had turned quite brown, became quite white by a few minutes immersion in a two per cent. solution of persulphate rendered fairly alkaline with ammonia. When the paper was dried and printed under a negative, good prints were obtained but of somewhat less intensity than with the fresh paper; but this loss can be avoided by adding 2 per cent. of silver nitrate to the persulphate. Paper thus restored gave quite as beautiful and vigorous prints as fresh paper.

THE following is from one of the leading photographic journals:—

"A NEW EXPLOSIVE? What one sees occasionally in the lay press is often highly amusing. In a paragraph now before us—in the

People of Sunday last—it is stated that;—'a miner named Wagcott, at Crayhead Colliery, Durham, was drying gelatine before his kitchen fire, when it exploded, blowing a portion of his house down.' It is the first time we have ever heard of *gelatine* being explosive. If it is, the dry-plate makers and the manufacturers of P. O. P. should be careful in future how they handle such a dangerous material. . . ."

Did the Editor never hear of 'blasting gelatine'?

VARIOUS attempts have from time to time been made to combine development and fixation of plates, but hitherto no very satisfactory results have been obtained. Hanneke, proceeding on the hint given by E. Vogel—that with a rapid pyrocatechin developer an excess of caustic alkali is unnecessary—recommends the following formula:—

Concentrated Stock Solution,

Pyrocatechin	7 grammes.
Caustic Potash (Stick)	7 "
Hyposulphite of Soda	30 "
Water	75 c. c.

For development of Sachs or Lumière plates he recommends:—

Stock Solution as above	8 c. c.
Twenty per cent. Solution of hypo	15 "
Water	20 "

The results are said to be excellent and the developer may be used a second time without great loss of rapidity.

WE commend to our readers the good example set by "S. McN." in the present number of our *Journal*. Such letters are always interesting, and if the members of the Society could only overcome the inertia which prevents their *beginning* to write, we are sure it would not give them much trouble to help in making the pages of the *Journal* more interesting than they now are.

VARIOUS photographic journals have recently given accounts of a spectrum photograph taken by Sir Norman Lockyer on a flexible film 30 inches long, and have written about it as if it were something quite new. The photograph was taken with a Rowland's concave grating of $21\frac{1}{2}$ feet radius which gives a spectrum some 30 inches long. The focal plane is of course curved, and if flat plates are used only a small part of the spectrum can be accurately focussed at the same time. Rowland himself, in making his magnificent map of the solar spectrum, used glass plates so thin that they could be bent by pressure into the proper curve, but he did not photograph a great length at one time, for various reasons. Professor Liveing, of Cambridge, however, has been using thin flexible films for several years past, and the writer of this note has in his possession photographs of the spectrum of cobalt, nickel, iron, and titanium, each 30 inches long, taken at least four years ago by Professor Liveing on thin films. These photographs are of high excellence. Other spectroscopic workers have, we believe, successfully used such films, so that Sir Norman Lockyer cannot claim novelty, at least, as one of the features of his recent work.

MR. J. O. NEUMAN, in the *Camera Club Journal*, gives a number of hints regarding photography in the Tropics, some of which are, no doubt, very extellent while others will strike many of our readers as curious. Thus:—"Provide yourself with porcelain trays: glass breaks too easily, and others will warp and split at the edges." Again:—"There are three things one must always encounter and guard against in the Tropics, *viz*:—(1) excessive dampness; (2) excessive light and absence of light-tight buildings; and (3) insects. The dampness pervades everything, and combined with heat and light makes a formidable enemy." Doubtless some parts of the Tropics are damp—especially during the monsoon—but, so far as our experience goes, excessive heat and excessive dryness are far more deadly enemies to the photographer in India than either dampness or insects.

THE Britania Company is bringing out a new platinum paper which it has named "Platona." We trust this new paper will have better keeping qualities in the Tropics than those now on the market.

ROYAL PHOTOGRAPHIC SOCIETY EXHIBITION.

WE take the following extracts from an advance copy of the prospectus which has been sent to us:—

The Forty-fourth Annual Exhibition will be inaugurated on Saturday the 23rd of September, by a private view, followed in the evening by a Conversazione.

The Exhibition will remain open daily (Sundays excepted) from Monday, the 25th of September, until Saturday, the 11th of November, from 10 a.m. till 5 p.m. It will also be open on Monday, Wednesday and Saturday evenings, from 7 to 10 p.m., when lantern slides will be shown.

Members have free admission at any time.

Medals will be placed at the disposal of the Judges. Exhibitors may state whether they wish their exhibits to be placed in the Pictorial or the Technical and Scientific Section. Ex i-bits not marked P. or T. will be dealt with in such section as the Selecting Committee may consider appropriate, but Exhibits may be excluded from the Technical and Scientific Division unless the points of special interest are distinctly stated. The Exhibition will be conducted according to the rules adopted at the conference of Judges.

Each exhibitor must fill up the entry form supplied by the Society, and send it by post to the Secretary, Royal Photographic Society, 66, Russell Square, London, W. C., on or before Tuesday, 5th September, or deliver it with the Exhibit (not packed) by hand at that address, on or before Wednesday, 6th September, at 9 p.m. Information as to particulars should be given with any work produced by a special process of the exhibitor.

At the back of each frame must be written the name and address of the exhibitor, with the title or description of the photograph, and the number (if there are more than one) to which it refers in the entry form. The front of the frame or picture may have the exhibitor's name, and the title of the picture, neatly inscribed upon it, *and these only*. To avoid damage to other frames, it is requested that all frames have sunken backboards with the fastening nails not projecting, and the backs covered with thick brown paper.

Any exhibit in the Pictorial Section by other than the exhibitor, with the exception of mounting and framing, will be held ineligible for an award.

Lantern slides will not be eligible for award unless both the negatives and slides are the work of the exhibitor. Frames will be provided for them. The loan of lantern slides for evening display during the Exhibition will not debar them in any way from future competition.

Negatives, transparencies, photo-mechanical prints, stereoscopic work, photographs of purely scientific interest, and photographs coloured by mechanical means will be admitted. Photographs in Oxford frames, photographs coloured by hand, and photographs already shown in any public Exhibition within the London postal district, are not eligible for admission. Excessive breadth in frames or mounts, silvered, gilt or oval frames, or projecting mouldings are undesirable, and may prevent photographs from obtaining the position they would otherwise merit. It is generally desirable that each photograph be separately framed.

All working up of photographs by hand is undesirable, and may cause the rejection of the exhibit.

Foreign and Colonial exhibitors will not be charged for wall space. The Society will provide frames during the Exhibition for approved photographs. The attention of Foreign and Colonial exhibitors is drawn to the following regulation:—That carriage *to* and *from* the Exhibition *must* be *Prepaid*.

In order to save disappointment by refusal of exhibits on account of late arrival, Foreign and Colonial exhibitors are strongly urged to send off their exhibits in *ample* time to arrive by the date prescribed, advising the Secretary of their despatch and the route by which they are being sent.

It is desirable that all packages of exhibits should bear the name and address of the sender.

It is to be distinctly understood that the sending of exhibits signifies acceptance by the exhibitor of the decision of the Council upon all matters connected with the Exhibition as absolute and final

The Council do not hold themselves responsible for any damage that may happen to the exhibits while in their custody, but every precaution will be taken to insure their safety and prompt return to the owners at the close of the Exhibition. They reserve the right to reproduce in the catalogue, or in general views of the Exhibition, any of the pictures exhibited.

Blank entry forms and any further information respecting the Exhibition, also nomination forms for membership, can be obtained from the Secretary of the Society, 66, Russell Square, London, W. C.

KARACHI.

DEAR MR. EDITOR,

You still, I see, complain of want of contributions from your subscribers,—perhaps a letter from an old member of your Society from far away Karachi may help to fill a page.

Karachi is, for all the world, like a rising suburb of some big English town. There would be no surprise at seeing "This desirable villa residence for sale or to let" in front of the houses.

New ones are being built everywhere, good substantial ones of yellow sandstone with upper storeys, in rows, all of different patterns, in neatly bricked-in compounds. There is none of the green spaciousness of your compounds, but the houses stand out close together in all their freshness and bareness. Though Karachi cannot now be said to be treeless, the growth is still young. Since the water was laid on from the subterranean river water, bushes and trees have been planted, the familiar casuarina making dark blotches everywhere.

Old residents say the water and trees have brought malaria, for fever was almost unknown at one time and now is only too well known.

Wanting are your grand Madras avenues and beautiful Chepauk Palaces to tempt one to carry a camera about and make pictures,—even your sea is wanting—Karachi is a seaport, but there is no sea visible. Wide mud and sand flats lie between with mangrove swamps, only covered at extra high tides. About two miles away is a cluster of houses known as Clifton, and to get to the sea one has to drive along a raised road across the mud flats to this Clifton, where a long wooden pier, built over the sands, at last lands one on the sea-shore. No catamarans, no boats, no fishermen's huts, nor life of any sort enliven this stretch of sands, only crabs scuttle about at one's approach. Four or five miles away on the other side of Karachi masts may be seen in the Harbour, where the fishermen must keep their boats, for the market is well stocked with fish.

The harbour is interesting from a business point of view, but not pictorially. Its quays with forty odd hydraulic lifts and many railway lines, laid out on the dredgings of the harbour, are all so many straight lines, and the shore on the other side is merely rolling sand waves with houses dotted about, and at the point a fort and lighthouse, too far away to photograph without the aid of a tele-photographic lens. An Arab dhow may sail by, but having taken one, all are taken, they are exactly alike, and steamers do not make pictures.

No, Karachi does not appeal to the eye. Its most conspicuous architectural object is the church tower, an ugly, square thing rising to more than double the height of the church itself, in which the windows are arranged with curious effect. Just above the roof the tower is pierced by one window, above that by two, then three, then four, and again four. I am told its great height makes it a good landmark at sea. By day it is seen long before the lighthouse at Mandla Point.

Photography, however, has plenty of devotees here, but the chief amusement seems to be taking snapshots at unfortunate people in ungainly attitudes. But many an interesting picture of animal life, can be got in the particularly well stocked and cared for "Zoo." I have gone round camera in hand and met many other cameras making their rounds. I got a good picture of the white peacock with tail spread, and of groups of black buck and pelicans sunning themselves, and then there is no lack of the ungainly, ugly "ships of the desert." It is an ugliness that rather grows than diminishes with familiarity. A dozen of them tied nose to tail moving noiselessly along is an uncanny train to come upon whilst cycling after dark. Often they are not only to be seen *and* smelt, but heard angrily expostulating with the camel driver, an unsavoury individual with his baggy trousers and roomy coat never changed. There is none of that undress about the cooly here that rather startles one on first arrival in Madras, but then he does not think himself amply paid by two annas a day. Even the golf caddy gets two annas a round instead of one. The Scinde grandee's hat is a curiosity. It is an inverted top hat of coloured velvet and tinsel.

In the City proper there may be some picturesque spots, but with plague rife I have not ventured to explore the native part. The business part where the merchants congregate is uninterestingly ugly, but I think in point of climate we can go one better than you good people in Madras.

I can only speak of 4 months' sojourn here, but in February a pair of blankets is comfortable at night, and all through March a wrap was necessary out driving of an evening. We have had a week of hot, dry winds and dust from

the N. E., which wind, like your long-shore one, is apt to give rheumatism, if slept in.

The house was then pleasanter shut up than open, but almost always a stray breeze, not to say a gale, blows up the Indian Ocean, and as there are no trees to keep it out, everywhere the full benefit is felt and the verandahs of the houses are protected by strong lattice work or the house would be blown inside out. The temperature has not yet been more than 95° in our house. It usually ranges between 80° and 85°, and this is May. It *can* be damp and steamy as some breathless days have shown, but these days are happily few and far between. It has rained twice since I came here, but a stormy, cloudy sky does not mean rain here. The clouds often come so low down that they may be felt, yet it does not rain.

With good wishes for the prosperity of the Society.

Believe me, yours,

KARACHI, S. McN.
May 28, 1899.

OUR HOME LETTER.

May 1899.

May day has come and gone leaving only an unpleasant impression of leaden skies, chilliness, and rain: small encouragement to the photographer who seeks to "make sweet friendships with the woods and groves". Time was when on the first of May the housewife put ugly waterfalls of white tissue paper in her fireplaces, and bade her daughters change their dresses from the serges and suitings of winter to the muslins and prints of summer. *Maintenant, nous avons change tout cela,* and unfortunately changed it for the worse. March seems to have moved forward to May, June is April in its showers and breezes, and only when July marks the turn of the year do we seem to reach warm days like that spring of childhood which we fondly remember. The photographer must perforce adapt himself to these changing atmospheric conditions, and boldly remove the words "weather permitting" from his scutcheon. The darkest cloud has its silver lining, and on the wettest day there is often a brief bright hour, when all nature seems at its best, and the pictorial effects are really delightful.

One often hears long discussions on the relative advantages of enlargements from small negatives, or large pictures taken direct. Well-known photographers hold opinions diametrically opposed to one another on this point. The advantages and disadvantages, however, depend very much upon the photographer's circumstances. If a man has convenient accommodation in his house for an enlarging outfit working either by artificial or day light, then he would doubtless prefer the conveniences of a small camera. On the other hand the large direct picture will appeal more to him whose facilities in that direction are small. From my own experience I admit that direct prints have a certain quality which cannot be imparted to enlargements, but it is a great inconvenience to drag a large camera about the country, while its cumbersome nature often means the loss of good subjects which may occur unexpectedly. With a small camera, quickly manipulated, one's chances are much better, and by careful subsequent treatment during enlarging, one can practically rival the best direct photograph.

The exceeding popularity of bromide papers, especially slow varieties of recent introduction, has brought an evil in its train to which frequent and emphatic attention ought to be directed. I have lately examined some hundreds of prints, all done by amateurs, on the different brands of slow bromide paper now on the market, and I am not exaggerating in the least when I say that fully fifty per cent are more or less fogged either through over exposure during printing, or on the other hand over exposure during development. Candle light or gas light is actinic, and only requires a certain length of time to produce a marked effect. I strongly advise all photographers to be very careful indeed in manipulating slow bromide paper, that is to very carefully protect the paper from direct rays of light until it is fixed. This can easily be accomplished by keeping the dish away from direct light during development, and at the same time giving proper consideration to the length of exposure required to obtain a plucky print from the negative. Flat bromide prints have a most objectionable washed-out appearance.

An interesting innovation has been introduced into the new Bond Street Studio of Messrs. Langfier. One end of the studio is arranged in the ordinary way with the usual backgrounds, chairs, and other necessary accessories; the other, however, culminates in a bijou stage with dressing rooms at each side, foot-lights, and everything which can help to give the customary scenic effects. The foot-lights consist of electric incandescent lamps of enormous power, so that exposures can be given with almost the rapidity of daylight. We believe Messrs. Langfier are the first to introduce a stage into the studio. The idea seems so good that one cannot help wondering why it has never been carried out before. It will be possible on these "boards" to photograph scenes from popular plays, groups or single characters, with all the realism of dramatic representation.

I regret to have to chronicle the death of a well-known experimentalist, photographer, and author, Mr. W. S. Bolton, which took place on May 12th. Mr. Bolton had been for some time suffering from cancer, and recently underwent a special operation from which it was hoped relief would be derived.

The operation, however, was not successful, and death followed not many days later. The deceased was engaged in investigating emulsions as early as 1864, and to him we owe many discoveries in connection with the gelatine emulsion process, especially as regards the preparation and washing of emulsions. Mr. Bolton contributed regularly to the photographic journals, and up to a few weeks since his signature was familiar in the columns of our weeklies. Older photographers will remember that from 1879 to 1885 he occupied the post of editor to *The British Journal.*

PERCY LUND.
("MATTHEW SURFACE.")

CORRESPONDENCE.

TO THE EDITOR OF THE

Journal of the Amateur Photographic Society of Madras.

SIR,

I am glad to see in the May *Journal* an appreciative notice of the Camera Club, of which I have been a member almost from the beginning. Will you allow me to supplement your correspondent's article in a few particulars?

The Club is a Limited Liability Company, and the only risk attaching to membership is the possible loss, if the Club fails, of the entrance fee of one guinea, which, under the rules, is expended in the purchase of a share in the Company. The foreign members of the Club—Indian members are, of course, foreign members—pay an annual subscription of one guinea, and in return get, post free, the monthly Journal of the Club, containing many interesting and valuable papers that cannot be otherwise procured. The President is that well known photographer and man of science Captain Abney, R.E., and the Committee includes many well-known men of eminence in science, such as the Earl of Rosse, Lord Crawford, Colonel Waterhouse, Mr. Lyonel Clerk, and a sprinkling of well known artists, such as Mr. Alfred East, A. R. A. The membership is between 700 and 800, and might have been greater, doubtless, had the Club not so rigidly adhered to the rule of excluding the professional element. I doubt, however, if its prestige would have been so great. It now presents the unique combination of a pleasant and well appointed social Club, and a photographic Society fully equipped with all appliances for the practice of every branch of the art. All the leading members readily place at the disposal of the newly joined tyro their valuable advice and assistance; there are no "trade secrets" and "free lessons in photography" are a fact and not a fiction. The latest development at the Club when I was last at home was in the direction of photogravure. A few enthusiastic members, under the able guidance of Mr. Horace Wilmer, were doing very creditable work in that difficult and delightful branch of the photographic art—hitherto, I believe, the exclusive domain of the professional. The address of the Club, it may be well to repeat, is 28, Charing Cross Road, W.C., and the Secretary is Mr. F. Seyton Scott, who will be only too pleased to supply any information asked for, and forward forms of application for membership.

H. H. O'FARRELL.

EXTRACTS.

Directions for Taking Photographs in Natural Colours.

COMMUNICATED BY PROFESSOR LIPPMAN TO THE "SOCIETE FRANCAISE DE PHOTOGRAPHIE," AND TRANSLATED BY FUERST BROTHERS.

DISSOLVE 4 grammes of gelatine in 100 grammes of water, add 0·53 grammes bromide of potassium. For orthochromatising add about 6 cc/m of alcoholic cyanide solution 1:500, and 3 cc/m of alcoholic solution quinol-in-red 1:500.

After having mixed the above ingredients and reduced the compound to a temperature below 40 deg. Cent., add, in a dark-room, 0·75 grammes dry powdered nitrate of silver and stir for a minute or two until dissolved. Filter through glass-wool. Pour it over the glass plates which have been warmed, in the same way as collodion.

Let the plates cool on a flat slab of very cold marble, wet each plate with alcohol before washing, then wash for half-an-hour, drain and dry. The plates are then ready and can be kept for a long time.

Before use moisten the sensitive emulsion with the following solution:—

Alcohol, absolute	100 grammes
Nitrate of silver	0·5 "
Acetic acid, glacial	0·5 "

Shake and dry. The plate thus manipulated increases its sensitiveness, but must be used the same day. Expose for about two minutes in sunlight before a Zeiss 6·3 lens.

DEVELOPMENT.

Any developer may be used, amidol, eikonogen, etc. Perhaps the best effect is obtained by M. M. Lumiere's developer:—

I.

Water	100 grammes
Pyrogallic acid	1 "

II.

Water	100 "
Bromide of potassium	10 "

III.

Caustic ammonia. Density 0·960

For developing take:—

Solution I	10 grammes
Solution II	15 "
Solution III	5 "
Water	70 "

It seems to be more advantageous to develop little and to intensify with bi-chloride of mercury and with amidol.

One can also develop very well with a dilute solution of ammoniacal protochloride of copper. For fixing after intensification use cyanide of potassium.—*Magic Lantern Photographic Journal.*

Advice in Plain Words on Starting Photography.

HOW TO GET THE CORRECT EXPOSURE.

In the second article of this series sufficient instruction was given to enable the beginner to determine at once what exposure to give on the particular subject with which he was advised to commence. If he has followed the instructions given throughout these articles he will now be in a position to try on some other subject, and naturally will look for guidance as to the exposure necessary. There are several things which influence this, the most important being the speed of the plate, the aperture of the lens, the nature of the subject, and the light at the time, this latter of course being dependent on the time of year, time of day, and the weather.

To take these different factors in their order, the speed of the plate is the first thing to be considered. There are (roughly) two rapidities sold, those known as ordinary, and the faster brands, which have some maker's name, intended to indicate that they are of the highest possible rapidity. The ordinary brands of plates differ in their speed considerably (as do the rapid ones), and the difference between one make and another, unless it is clearly indicated on the box, which is not often the case, must be found by experiment. If the plates are marked with what are known as "H and D" numbers, nothing more is necessary than to remember that the exposure must be increased in the exact proportion that the "H and D" numbers decrease. That is to say, given two lots of plates, one marked "twenty H and D" and the other "forty H. and D.," the plates marked twenty must have twice the exposure, that the plates marked forty have, because forty is twice twenty, and so on in proportion. The writer's advice in this is, however, to get the one make of plate and stick to it until its peculiarities, both as regards rapidity and the way it develops, are thoroughly mastered.

The "aperture of the lens" is the next consideration. On page 264 the stops of the lens were referred to, and it was pointed out that these are usually marked in the form of fractions, such as f/8, f/11, and so on. Most lenses marked in this way have their stops so arranged as regards size, that each one as it gets smaller, necessitates the exposure being double, that required with the previous one. They usually run, therefore, f/8, f/11·3, f/16, f/22·6 f/32, f/45 and f/64, and the photographer will be quite near enough if the difference between these is considered as one necessitating twice the exposure given to the next larger one in each case. The decimal fractions in the case of f/11·3 and f/22·6, etc., may be ignored. For example, the standard subject suggested as being that best suited to begin on was a building partially in sunlight taken about the middle of the day in April or May. Such a subject with an ordinary plate and stop f/22 requires two seconds; if instead of f/22 the next smaller stop (f/32) is used the exposure is doubled, that is, it will require four seconds; if f/45 is used the exposure is again doubled, *i.e.*, it will require eight seconds; if, on the other hand, f/16, the exposure will be halved, that is, it will want one second, with f/11 half a second, and with f/8 a quarter of a second.

The advantage of knowing the correct measurements of the stops by this system is this—it does not matter whether the lens is a portrait or a landscape lens; it may be called an instantaneous lens or a slow lens; *if you use with it its own stop marked f/8 it will want the same exposure as any other lens on the same subject also working with its own stop marked f/8*; in like manner all lenses used with their stop f/16 require the same exposure on the same subject. This rule is not absolutely accurate, but is quite near enough for all practical purposes. The difference between a fast lens and a slow one is that the fast lens is so made that it can be used satisfactorily with a stop having a bigger opening, that is, the worker might have a lens working at f/8 and another which could not be used with success unless he had stop f/16 in it; the f/16 lens would be slow compared to the one working at f/8.

The convenience of marking the stops in this way so that lenses can be compared one with another is a very great one, and the photographer should learn to accustom himself to consider the necessary exposures for different subjects not as being so much with his "smallest stop but one," or with his "biggest stop," but as so much when working at f/8 or f/22, and so on, so that when he comes to use another lens he is at once at home in the matter of exposure, knowing that so long as he works with a stop marked in the same way, the exposure, other things being equal, will be the same whatever the make of lens.

The next factor to consider is that of the subject. This is important, and, unfortunately, cannot be tabulated so conveniently and clearly as that of the size of the stop. The building partially in sunshine may be taken as a very fair average of the out-door subject. In proceeding to consider what alterations in the exposure are required by alterations from this type of subject, let it be supposed that, instead of the fairly well-lit building, there is a mass of trees, some of them close up to the camera, and making very deep heavy shadows with very little light in them, the exposure necessary will be a longer one. It may be twice as long as the building requires, it may be four times, and in extreme cases it may be even ten or twenty times; experience alone can teach what is required. Should the subject be, say, an open landscape with no very deep shadows in it, the exposure, on the other hand, will be much less; it may be a half or even a quarter of that required by the building. A panorama of open country will not require more than a quarter that given to the building. If the view be simply a very wide one of sea and sky the exposure is still further reduced to an eighth or even a sixteenth of that given to the building.

It will be seen then that between an open marine veiw and dark and heavy woodland scenery there is a wide range of exposure. The writer has given some indication of the effect upon the exposure made by an alteration in the subject, and would like to be more explicit, but this is a matter unfortunately which nothing but actual experience can determine. Experience is the only teacher, and to profit by experience a note of every exposure should be made, and after development a further note added stating whether the result was correct or not, and, if not, in which way the error was made. It may be mentioned here that in addition to the mere lightness or darkness of the subject its colouring is a very important

matter. In the evening, when the air is full of the golden light of sunset, a much longer exposure is necessary than might at first sight appear, because the light is very yellow, and yellow light has but a slight effect upon ordinary photographic plates.

So far only the matter of views has been considered; with interiors and portraits the conditions alter again. Portraits out of doors may be taken as requiring a little more, in most cases, than the building; double the exposure would probably be sufficient, dependent upon the effect required, and the way in which the light falls on the subject, whether much of it is cut of by screens, and so on. With indoor portraits so little light comparatively gets to the subject that the exposure may be enormously prolonged. Here again experience can be the only real teacher. In a very brightly-lit room, with big *clean* windows and with the subject not far away from them, four or five times the exposure given to the building may be sufficient; as the window space decreases, or the subject is further and further away from the light, so the necessary exposure increases.

It is useless attempting portrait work indoors, at any rate at first, unless the lens used can be worked at f/8 or, better still, at some bigger opening, especially if ordinary pla es are used. If very fast plates are employed smaller stops can be used under favourable conditions, but it is better, at any rate for the beginning, to stick to the ordinary plates, to use the biggest opening in the lens that it has, and to take care whatever happens to give the longest possible exposure to sitters indoors; under-exposure is the one thing to be avoided here as at all times.

With interiors again the exposure may vary greatly, according to the way in which the subject is lit, size of windows, their cleanliness, whether they are glazed with white or coloured glass, and so on. The exposure necessary for a well-lit church interior may be from twenty to several hundred times as long as for the exterior of the same building—once more the writer can only say experience must teach.

The last factor bearing on exposure referred to here is that of the light. The brightest light of all may be taken as brilliant sunshine, and if this necessitates an exposure for a given subject of, say one second, a dull day for the same subject would require five to ten seconds. A bright day when the sun is merely hidden temporarily behind light clouds means that the exposure should be about twice that with the sunshine; if it is distinctly dull, three or four times should be given. Apart from the mere cloudiness of the day is the question of time of year. In May, June and July the light is at its best, December at its worst. The difference will be best understood when it is said that with a given subject in bright sunshine at midday in December, the exposure should be about four times as long as under the same circumstances in June; the intermediate months roughly requiring proportionate exposures. In the same way the time of day affects the exposure. At this time of the year (May-June) the exposure at six o'clock, morning or evening, in bright sunshine, is about three times as long as it is in the middle of the day, but, as the evenings draw in, so the proportionate exposure increases until in the duller months photography is only possible for two or three hours on each side of midday.

When the different factors, taken as a whole, are considered, no doubt the result must be, to one unaccustomed to photography, very confusing. To give an example of how they may be applied, suppose that the photographer wishes to photograph an open landscape in the early morning, or late in the afternoon, six o'clock a.m. or p.m, for instance, in May, and that, instead of working with f/22, he proposes to use f/11, his plate being the ordinary one with which the first exposures were made. A building in sunshine (midday), it has been seen, necessitates an exposure of two seconds—the plate being the same brand, no difference need be made for it—the stop f/11 requires only half the exposure of f/16, and f/16 only half that of f/22, therefore f/11 requires a quarter that of f/22; instead of two seconds, therefore, the exposure, as far as the stop is concerned, is reduced to half a second. The subject being an open landscape requires only about one-third as long as the building did, the exposure is therefore still further reduced from half a second to one-third of that, *i.e.*, one-sixth of a second. On the other hand, photographing at six in the evening instead of at midday has increased the exposure about three times. The one-sixth of a second has now become half a second, which would be about right for sunny weather; if the sun is behind clouds, one second, or if the weather is dull two or three would probably be necessary.

After a good deal of practice, this calculation of the length of exposure becomes almost automatic, and is done without effort, but at first it is a very serious matter, and anything that helps to make it simpler is welcome. There are many such aids. Messrs. Hurter and Driffield have invented a little instrument called an "actinograph," sold by Messrs. Marion and Co., which will be found very useful, especially when used with plates sold in boxes marked with the H and D speed numbers. "Watkins's Exposure Meter," which can be got from any dealer, is an excellent instrument to put in a beginner's hand, and will be found with a little practice simply invaluable. The Britannia Works Co., who make the Ilford plates, and the Paget Prize Plate Co., both supply tables or meters for use with their particular plates, in addition to which their other exposure meters, such as the Wynne, sold. These latter are, however, either tables or calculating machines, while Watkins's meter contains in itself a little instrument for actually measuring the strength of the light at time of exposure.

The writer can only say, in concluding this part of the subject, that the advice he gives is to commence with the help of an exposure meter of some kind or other, to gradually learn how to use it, and to endeavour to do so intelligently. With such an instrument as Watkin's meter, and a little care and practice, errors of exposure should soon become almost, is not quite, unknown.—*Photography.*

Copying.

By Osborn Thornbery.

Every amateur photographer has at some time or another a photograph or print which he desires to copy. He does not always make a success of it, as he does not know how to treat it to obtain the best results. He may have broken a valuable negative, and, having a print of it, he desires to copy it to obtain another negative. I am sorry to say that many amateurs are very dilatory, and do not keep prints of their negatives. This is a great

pity when a negative which cannot be obtained again is broken, as then it is completely wiped out of existence. This would be different if all amateurs would keep a portfolio containing prints of all the negatives (that were any good) that they had taken; not only would it be useful if a negative by some means or other got broken, but would give much pleasure in after years to look over it and call to mind many a pleasant hour spent in photographing. All subjects to be copied should not be treated in the same way; for instance, a photograph should not be copied in the same way as an engraving or line drawing, because a photograph has half-tones, which must be reproduced, whereas an engraving has clear whites which must be perfectly opaque on the negative, with clear shadows. Glazed photographs are decidedly the best to copy, as the grain of the paper does not show so much as it does on a rough photograph. When bromides are to be copied, they should be glazed by squeegeeing on to a ferro-type. I find that a 12 in. by 10 in. printing frame with a piece of glass in it is best to put the photograph or print to be copied in, as the print will not buckle or crease in the frame, and the pressure on it will smooth down the grain. The print must be placed as near as possible in the centre. If a picture hook is screwed into exactly the centre of the top of the frame, it may then hang from a nail perfectly parallel with the wall while copying. Before copying, the photograph should be sponged, to remove any finger marks, then spotted, and any defects retouched out, so as to make the copy as good as possible. The camera must be placed opposite the subject and parallel to it, and the axis of the lens must be exactly level with the centre, or distortion will result. The lens may be either a rectilinear or a wide angle, though the former is preferred if not of too long a focus, as it is not so liable to distort the picture. If the object is to be photographed to its exact size, the distance of the object from the lens and the distance of the focussing screen from the lens must both be twice the focal length of the lens. If the lens is a long focus one, the bellows will not always extend enough. If this is the case, an extension of a few inches may be made by taking out the frontal board of the camera, and fix in a cardboard box to fit it tightly; the lens should fix in the front of the box, it should be perfectly light-tight, and be blacked inside with dead-black. Most cameras are made now with sixteen inches extension of bellows, so the extra extension will not be needed, unless the lens is a very old-fashioned one. If it is desired to copy the print smaller than its real size, the camera will not have to be extended so far; if required larger, the extension, of course, will be greater. Magnesium ribbon, gas-light, incandescent, lamplight, acetylene, and daylight may be used as illuminants; the last is preferable as it gives best results, but some amateurs are engaged all day, and these of a necessity must use artificial light for copying. If practicable, the photograph should be copied out of doors in an even light, but not a strong one. It should be focused as sharp as possible, and then the lens stopped down; not too low, unless the photograph contains some fine detail or the light is very bright. Now, with regard to exposure, this will depend upon (1) the light, (2) rapidity of the lens, (3) stop used in the lens, (4) distance of the lens to the ground glass, (5) distance of the lens to the subject, (6) the colour and depth of the subject, (7) the rapidity of the plate.

It will found that photographs toned to a yellowish brown require a longer exposure than those toned to a purple. Bromide prints and photographs of a slaty grey-blue colour will copy in much less time than those of a red-chalk or sepia tone. Prints that are fading or are turning yellow will also require a long exposure. In photographing this class of print it is best to use a slow isochromatic plate. If the prints are very yellow, they should be placed behind a pale blue glass. Slow plates will generally be found the best for copying, as they do not block the high lights so much as rapid ones. The correct exposure cannot be given without knowing the circumstances, but we will suppose that we are copying to the same size as the original a photograph of a purple colour; using an Ilford ordinary plate, R. R. lens of about 6-in. focus, stop *f*/22, out of the doors in a fairly bright light, the exposure would be about three minutes. Copying is not practicable out of doors in wet weather, but it may be done inside in a well-lighted room. The object should face the light, but this cannot always be done, because of the reflection. If this is the case, it should be taken with a side light, a piece of white cardboard being placed underneath it to throw up the light, also another piece at the side farthest from the light. This will effectively distribute the light, and tone down the grain. Of course, indoors the exposure will be much greater than that given for out of doors, but ten minutes to a quarter of an hour will generally be found sufficient. As I mentioned above, artificial light may be used, but the exposure will be very long compared with daylight. Focussing must be done by holding a lamp close up to the photograph; a smaller stop than *f*/16 must not be used, as it will only increase the exposure. With magnesium ribbon about twelve inches burnt on each side will be required. Each should be cut into two pieces of six inches each, as it is then more convenient to use. It should be held in a pair of plyers while burning. When the plate is in position remove the cap from the lens, and light a piece of the ribbon by holding in the flame of a candle; when alight hold a little to the right of the lens, taking care that no shadow falls across the picture, then burn another piece. The other two pieces should be burnt on the left side in the same manner. With gas and lamp light, the exposure will be very great, and plates will require one or more hours' exposure; with incandescent the exposure will be about three-quarters of an hour, and with acetylene twenty minutes to half an hour will be sufficient. It is important that the exposure should be made in a room free from vibration, otherwise blurred pictures will result. These negatives are best developed with pyrogallic acid, as it will give more detail and less contrasts than hydroquinone, and is far and away the best for developing plates exposed on any subjects that have half-tones. If the negative after fixing is found to be thin, it should be well washed and treated with the ammonia and mercury intensifier. Engravings, drawings, and black and white prints will require different treatment to the above. In the first place, the best results can only be obtained by copying in an even and diffused daylight, and must be focussed as *sharply* as possible and the lens *well stopped* down. Photo-mechanical plates should be used, but it must be remembered that these plates are very slow, and consequently require a greater exposure. They give more contrast and are the best to use, because in a subject with lines the main point is to obtain clear glass in the lines, combined with great density in the whites. This can only be obtained by giving a correct exposure and developing with a weak hydroquinone developer. If the negative is thin, it is

advisable to intensify it. This is best done by soaking the negative for ten minutes in a 5 per cent. solution of hydrogen peroxide and well wash, then place in a bath of—

A.—Bromide of potassium	10 gr.
Bichloride of mercury	10 ,,
Water	1 oz.

till white, rinse, and then transfer to—

B.—Pure cyanide of potassium	10 gr.
Nitrate of silver	10 ,,
Water	1 oz.

Great care must be taken that the print is evenly illuminated and the camera upright, as any grain or distortion would completely spoil a line subject. Sometimes a picture in a book is required to be copied, and as most of the pictures in books are copyright, it is advisible to first of all obtain permission of the author or publisher before copying. If the book is of value, the leaf cannot of course, be cut out, so it must be photographed where it is. This is best done by tying pieces of tape round the book on the margins, thus keeping the leaf perfectly flat, and the leaves on the other side of the book may be kept back by tying another piece of tape round the middle. The book may then be stood on the edge of a table or a ledge, in a good light. No difficulty will then be found in copying it. Amateurs have sometimes negative that are very thin, which no amount of intensification will improve. With this class of negative it is best to bleach them white right through in saturated solution of bichloride of mercury, wash, dry, and place a piece of black paper on the film side. On looking at it on the glass side, it will be found to be a clear positive image. If this is copied on a photo-mechanical plate, it will make a good negative. Tracings of drawings and plans it is sometimes desired to copy, with these it is also best to obtain a negative with opaque whites and clear blacks. There are three methods of copying them : (1) copying in the camera, (2) negative by contact on glass, (3) prints by contact on paper. The latter method is mostly used by engineers, as it gives, a print exactly the same size as the tracing. It is done by making a solution of gelatine ½ oz., water 7 oz., heat it till dissolved, then mix with Indian ink or some pigment, and pour while warm and liquid into a dish. Float a piece of paper the desired size upon it, and dry without heat. When thoroughly dry, place in—

Perchloride of iron	240 gr.
Tartaric acid	72 ,,
Water	5 oz.

Allow to remain for three minutes, and dry it in the dark. It should be placed in the printing frame with a piece of glass in front, the coated side against the tracing, and when printed place in warm water, and the parts acted upon by light will be dissolved away, leaving the lines black on a white ground. if a great number of copies the same size as the original are required, and the tracing is only available for a short time, the best plan will be to make a negative. This done by placing the tracing in the frame as before, and putting a photo-mechanical plate in contact with it, exposing it to the light for about ten seconds, and then developing with a weak developer. As many prints as are required may be obtained by printing on P. O. P. or some other paper in the usual way; this will also give black lines on a white ground. By copying in the camera, the tracing may be copied to any size. It is done in the same way as an engraving, except that it is backed up with a piece of white paper. Oil paintings should be photographed out of doors, as the light is more even, and does not exaggerate the grain of the canvas. They present special difficulties in consequence of the failure of ordinary plates to correctly reproduce the lights and shades, as the colours interfere with them. Thus, if there is any red in the picture, it will come out black in the copy; therefore orthochromatic or isochromatic plates must be used, as they are more sensitive to yellow and red than ordinary plates. Oleographs and coloured pictures should also be treated in the same way. Transparencies and lantern slides may easily be copied. They should first be unbound, that is, the binding should be scraped off and the cover glass removed. It should then be placed in the printing frame, film side in, and on top of it should be laid an ordinary plate, film side against the other film; slow plates are the best because they give greater brilliancy. If the transparency is of the usual density, the negative should be exposed for about three seconds, two feet from an ordinary fish-tail gas jet; prolonged exposure will result in a flat negative—a very weak developer must be used. This is the easiest method, but is not always practicable, as it is not every transparency that can be unbound. In this case the best plan would be to place it in the enlarging camera and reproduce it to the same size.

The positive collodion process on glass is one that retains its beauty for ever. We are sometimes asked to copy one of these. Now these positives are practically a negative whitened and backed up with some black substance. If this can be removed, it may be used as an ordinary negative, and prints obtained from it in the usual way. If the backing is velvet, no difficulty will be found in removing it, as it will peel off easily. If it is black varnish, no attempt should be made to remove it, as it is very risky, and will almost sure to end disastrously, owing to the frequently tender condition of the collodion. The negative, then, must of a necessity be made by copying with reflected light, as described above. Many Daguerreotypes, which were the rage some fifty years ago, are still as brilliant as when first made. These present sometimes difficulties in copying, because the image, being formed of silver, tarnishes easily, and if photographed in this condition it will appear as if stained; therefore it is best removed. Take the plate carefully from the mount and lightly dust with a camel-hair brush. Care must be taken in doing this, as the film is very tender, and will be spoilt if fingered. Make a solution of pure potassium cyanide, 15 gr. to the ounce of distilled water, and pour it in a porcelain dish. Wash the plate over with some alcohol (which must be absolute and pure) two or three times and place in the cyanide bath, rock the dish, and leave the plate in till clear and bright, which usually takes from five to ten minutes. Wash slightly with water, and give a final swill with distilled water; then dry it by holding over a spirit lamp with a pair of pincers, blowing continuously till quite dry. Daguerreotypes, unlike photographs, should be copied in a good light, sun-light if possible, so as to obtain a brilliant reproduction. If the above directions are carefully followed, no amateur ought to have any difficulty in copying any subject—*The Amateur Photographer.*

COMPETITIONS.

(Open only to Members of the Society.)

HALF YEARLY ... **Architecture.**

RULES.

1. *Two Special Competitions shall be held, in each year, in addition to a monthly competition.*

2. *The Committee shall select the subjects for the Special Competitions, and notice of the selected subjects shall be announced in the Society's Journal in February and in July of each year. The subject for each monthly competition shall be selected two months in advance by the members present at the monthly meeting, and shall be notified in the next issue of the Society's Journal.*

3. *Pictures, &c., competing for Prizes at the Special Competitions must reach the Secretary by the last day of January and of May, and those competing at the monthly competitions must arrive in time to be shown at the monthly meeting.*

4. *Prizes will consist of Silver and of Bronze Medals, and of Certificates of Merit.*

5. *Not more than one Silver and one Bronze Medal shall be given at each Special Competition, and one Silver and one Bronze Medal may also be given at these competitions for excellence in copying, enlarging, lantern slides, or any other special branch of photography. One Silver and one Bronze Medal shall be awarded half-yearly to the exhibitors who obtain the highest and the next highest marks respectively at the monthly competitions. The number of Certificates of Merit granted at each competition is left to the discretion of the Judges.*

6. *A member may receive only one Silver and one Bronze Medal in the special, and one Silver and one Bronze Medal in the monthly, competitions, held during the same year; but should a member who has been adjudged a medal be disqualified under this rule from receiving it, he shall be given a Special Certificate instead, marked 1st or 2nd Prize.*

7. *A Special Committee of three members shall be appointed Judges by the General Committee to carry out, subject to these Rules, all arrangements connected with the competitions.*

8. *The Special Committee shall be appointed after the Annual General Meeting in January, and shall hold office for one year, and any vacancy occurring will be filled up by the General Committee.*

9. *The Special Committee shall decide upon the merits of the pictures, &c., sent in for competition, and their decision shall be final. The system of judging the monthly exhibits shall be by awarding marks, a record of which shall be kept by the Judges, the marks being totalled and the results declared half-yearly. For this purpose, only the three highest marks awarded at each competition to each competitor shall be recorded, but not the aggregate marks gained by each for a number of exhibits.*

10. *If any member of the Special Committee is a competitor, the General Committee shall appoint a non-competing member to act as Judge at that competition instead of the competing member.*

11. *No exhibit shall compete twice, but pictures, &c., already exhibited elsewhere, may be sent in for the competitions.*

12. *Lantern slides sent in for competition shall be in sets of six, and shall be judged upon the screen.*

13. *The Special Committee shall not award any Prizes or Certificates, unless they consider the exhibits to be worthy of such distinction.*

14. *Each competing exhibit shall be the entire work of the exhibitor, and when sent in shall be accompanied by a Certificate in the annexed form:—*

> *"The (1) Arranging, (2) Exposing, (3) Developing, (4) Retouching (if any), (5) Printing and (6) Trimming and Mounting were done by me without assistance."*
>
> ____________________
>
> *Member, A. P. Socy. of Madras.*

15. *All pictures for the Special Competitions shall be mounted, and may, at the competitor's option, be framed but not glazed. Those for the monthly competitions need not be mounted, but should be trimmed.*

16. *Each competing picture should have a name or title, which should indicate the nature of the subject.*

17. *No competitor shall be allowed to send in more than six pictures to compete for any particular Prize, but the same member may compete in all branches specified in Rule 5.*

18. *The pictures gaining 1st and 2nd Prizes at the half-yearly competitions, and the best pictures sent for the monthly competitions, shall, when practicable, be reproduced in the Society's Journal.*

19. *To give up-country members an opportunity of seeing the competing pictures at the special competitions, the pictures shall be circulated to all members of the Society, not residing in Madras, who apply to see them. As this arrangement can only be carried out by the cordial co-operation of the members themselves, they are expected to forward the pictures without delay to the next member, and to send one of the accompanying post-cards to the Secretary, so that by this means the progress of the pictures may be traced.*

FOR SALE.

1. New T. T. and H.'s ½ Plate "Cooke" lens with cap in leather case, and flange, Rs. 90.

1. Very little used Mag: H. Camera ¼ Plate size R. R. lens, T. and P.'s shutter &c., Rs. 75

1. Std: ¼ Plate Camera, lens, 2*d.* slides, shutter, velvet foc: cloth, W. P. C. case and stand, Rs. 25.

1. Very little used Pocket Kodak and 6 spools of film &c., Rs. 15.

Apply, W. Ch. RAGHUNAYAKULU GARU, BOBBILI,
Vizagapatam District.

A Full-plate Outfit Comprising:—

1 Optimus Full-plate Camera brass bound with turntable, three Double dark-slides and a Solid Leather case.
1 Folding Tripod Stand.
1 Optimus Euryscope Lens with Iris Diaphram, F/6.
1 Optimus Euryscope Lens W-A. with Iris Diaphram, F/9-50.
1 Optimus Metal Shutter.
1 Thornton-Pickard Shutter.
3 Porcelain Dishes, 1/1.
3 Vulcanite Dishes, 1/1.
1 Developing Lamp, Kerosine.
1 Zinc Washing Tray and Rack, 1/1.
2 Graduated Measures.
3 Glass Funnels.
1 Set Scales and Weights.
4 Printing Frames, 1/1.
1 Case for Sensitized Paper, 1/1

Offers Wanted.

Apply to HUGH M. LESLIE,
Marikuppam, MYSORE STATE.

Wanted Offers by E. W. Stoney, 1, College Road, Nungumbaukam, Madras, for the following Photographic papers:—

Amateur Photographer, January, 1886, to February, 1897, Vols: 3 to 25.

Journal of Photographic Society of India, July, 1889, to May, 1896, Vols: 2 to 9.

Journal of Photographic Society of Madras, December, 1894, to March, 1897.

Rates of Subscription, Payable in Advance.

——	India, including Postage.	Europe, including Postage.
Twelve months ...	5 Rupees ...	8*s*.
Six months ...	3 " ...	5*s*.

N.B.—The Journal is issued on the 15th of each month, and is posted free to members of the Madras Amateur Photographic Society.

Entrance Fee, Rs. 5.—Annual Subscription *for Resident Members, Rs. 15; for Up-country Members, Rs. 12. Members joining after 30th June pay Half-year's Subscription.*

Candidates for Election—*should be proposed by one member and seconded by another; and they will be balloted for at the following meeting.*

Ordinary Meetings—*of the Society are held on the first Friday of each month at 6 p.m. and members are at liberty to introduce visitors.*

Letters to the Editor—*should be addressed care of Messrs. Graves, Cookson & Co., Scottish Press, Mount Road Branch, Madras.*

Letters to the Honorary Secretary—*should be addressed to S. Jackson, Esq., care of Messrs. Binny & Co., Madras.*

Letters to the Honorary Treasurer and Remittances—*should be addressed to V. G. Lynn, Esq., care of Messrs. Best & Co., Madras.*

Communications regarding the issue of the Journal—*should be addressed to the Publishers.*